The Report Committee for Gayle Renee Fischer Certifies that this is the approved version of the following report:

Digital Middle Eastern Studies: Challenges, Ethics, and the Digital Humanities

APPROVED BY
SUPERVISING COMMITTEE:

Supervisor:

Karin Wilkins

Philip Doty

Digital Middle Eastern Studies: Challenges, Ethics, and the Digital Humanities

by

Gayle Renee Fischer, B.A.

Report

Presented to the Faculty of the Graduate School of

The University of Texas at Austin

in Partial Fulfillment

of the Requirements

for the Degrees of

Master of Arts

and

Master of Science in Information Studies

The University of Texas at Austin

May 2015

Abstract

Digital Middle Eastern Studies: Challenges, Ethics, and the Digital Humanities

Gayle Renee Fischer, M.A.; M.S.Info.Stds.

The University of Texas at Austin, 2015

Supervisor: Karin Wilkins

This professional report explores the adoption of digital humanities practices in the field of Middle Eastern Studies, focusing on what Middle Eastern Studies contributes to overall digital humanities discussions. An increase in conferences, panels, and workshops since 2013 shows that scholars in Middle Eastern Studies and related fields, such as Islamic Studies, display an interest in the digital humanities and the power of academic digital tools and methods to contribute to their work. Middle Eastern Studies as a discipline faces unique challenges in the adoption of digital humanities practices, arising from its interdisciplinary, geographically-focused nature, problems working with non-Roman scripts in the digital environment, and ethical issues based on the history of colonialism in the region. Due to U.S. foreign policy interests and the unintended applications of digital Middle Eastern Studies research, scholars working with these methods should carefully consider the impact their work may have on individuals

currently living in the Middle East.

Table of Contents

Introduction

Throughout the last fifteen years, a collection of methods, theories, and projects labeled the "digital humanities" swept through U.S. universities, provoking innovation and critique. Although primarily English and history departments initially accepted digital humanities practices, other disciplines within the academy are beginning to adopt and question these practices. Specifically, Middle Eastern Studies and closely related fields, such as Islamic Studies and Arabic Language and Literature, show an increasing interest in and skepticism of digital humanities practices.

The timing of this interest in digital methods may partially relate to the surge of research analyzing the use and effects of social media in the 2009 Iranian presidential election protests and the Arab Spring in 2011 (e.g., Sreberny & Khiabany, 2010; Sakr, 2013; Urgola, 2014; Presner, Shepard, & Kawano, 2014). Although a close reading of select Tweets or blog entries may suffice for some of this research, scholars may also wish to learn methods for obtaining and analyzing large data sets through techniques such as data mining, or by taking advantage of the visualization possibilities of geocoded data with mapping software.

Since 2013, the rising number of Middle Eastern Studies conferences, panels, and workshops related to the digital humanities indicate a sustained, broader interest in exploring digital methods and tools. Among these events include a three part series of panels at the 2013 Middle East Studies Association Annual conference, which highlighted projects in the field and concluded with a roundtable discussion of discipline-specific

challenges and planning.[1] Shortly following the Middle East Studies Association panels, Brown University's Digital Islamic Humanities Project hosted a conference entitled "The Digital Humanities + Islamic and Middle Eastern Studies." Similarly to the panels, this conference surveyed a range of projects using digital tools, including text mining, e-publishing, and digitization.[2] This varied set of topics mirrors the diversity of projects and trends within the digital humanities more generally. Since 2013, the Digital Islamic Humanities Project continues to host annual events, with a 2014 workshop[3] concentrating on the use of digital tools for textual analysis tasks and plans for a 2015 conference devoted to distant reading and tools such as topic modeling and social network maps.[4] In the spring of 2015, the American University of Beirut (AUB) hosted its own digital humanities conference, showing interest in the digital humanities within the Middle East.[5] Significantly, however, the AUB is an institution that represents U.S. interests and teaching methods in Lebanon.

The transition from traditional research methods to the approaches of the digital humanities and digital scholarship provokes many challenges familiar to scholars working in disciplines with a more extensive relationship with digital methods, such as

1 "Digital Humanities in Middle East Studies I: Traditional Sources, Nontraditional Methods" (https://mymesa.arizona.edu/meeting_program_session.php?sid=774150dd18cd5a9303553aef23092665); "Digital Humanities in Middle East Studies II: Digital Communication" (https://mymesa.arizona.edu/meeting_program_session.php?sid=69dd6538659b50ef74e735d74e29ad6f); and "Digital Humanities in Middle East Studies Roundtable" (https://mymesa.arizona.edu/meeting_program_session.php?sid=30de40a42f6fdba4cd8f6e3de224202a).

2 http://islamichumanities.org/conference2013/

3 http://islamichumanities.org/workshop-2014/

4 http://islamichumanities.org/conference-2015/

5 https://dhibeirut.wordpress.com/

English, history, and archaeology. Challenges include the difficulties of mastering programming languages, the tensions inherent in the switch to a collaborative model of scholarship, and the experimental nature of digital humanities projects, which sometimes result in productive failures. In spite of these challenges, the benefits include the increased visibility of Middle Eastern texts through the Web, the ability to study regions that are inaccessible from the ground due to conflict or travel restrictions, and reaching out to audiences beyond the academic Middle Eastern Studies community through Web-based projects.

In addition to these familiar challenges, the overlap between Middle Eastern Studies and the digital humanities presents unique problems and features. Some of these challenges originate in the inherently interdisciplinary, geographically-centered nature of Middle Eastern Studies and other area studies fields more generally. Unlike traditional humanities or social science disciplines, area studies departments blend scholarship from the humanities and social sciences, organized around a loosely defined geographic region, such as the Middle East or Southeast Asia. With relation to the adoption of digital methods in Middle Eastern Studies specifically, scholars confront problems related to the nature of the Arabic script and incompatibility with tools and software, in addition to ethical concerns arising from a history of colonialism and imperialism in the region. These unique challenges expand the scope and complexity of overall discussions in the digital humanities.

Exploring the overlap between the digital humanities and Middle Eastern Studies

highlights key tensions in the identity of the digital humanities as a strictly humanities-based endeavor and raises important considerations with regards to ethics and the intention behind and application of digital humanities data sets and research. The exploration of this overlap also shows that Middle Eastern Studies and the digital humanities share features, most significantly that of historical development and internal interdisciplinary tension. Approaching the digital humanities from the perspective of scholarship rooted in non-European languages and traditions exposes important problems regarding the inclusiveness of the digital humanities and reveals ethical considerations that digital humanists ought to address.

This report explores the overlap between the digital humanities and Middle Eastern Studies, focusing in particular on unique challenges in a Middle Eastern Studies context and the ethical dilemmas of using digital tools to study a formerly colonized region with continuing U.S. economic and military interests. Middle Eastern Studies presents an approach to the criticism of the digital humanities as a utopian endeavor divorced from the concerns of U.S. political influence. Through historical and conceptual similarity, in addition to the unique concerns Middle Eastern Studies scholars encounter while working in a more directly and obviously political field, Middle Eastern Studies offers the opportunity to raise critiques of the digital humanities. First, this report will consider the meaning and origins of the digital humanities, focusing on the accepted origin story of Father Busa and his early humanities computing project, the Index Thomisticus. Then, this paper will look at the nature of area studies as an

interdisciplinary field and a product of U.S. political and military strategy in the post-World War II and Cold War context. Next, this report will consider the challenges to the digital humanities, based on concerns of exclusion and connections to U.S. political interests. Turning to the adoption of digital humanities practices in Middle Eastern Studies, this paper will consider a survey of unique challenges that confront scholars working in this combination of fields. This section will, in particular, consider ethical concerns, which Middle Eastern Studies scholars working in a digital environment bring to overall discussions of the intentions and applications of the digital humanities. Finally, this paper will conclude by considering what digital humanists and Middle Eastern Studies scholars can do in light of these ethical dilemmas.

The Development and Conceptual Foundations of the Digital Humanities and Middle Eastern Studies

As they emerged in the United States, Middle Eastern Studies and the digital humanities, including its precursor, humanities computing, have similar chronologies and features. The most obvious shared feature consists of the interdisciplinary natures of Middle Eastern Studies and the digital humanities, particularly the tension of including qualitative and quantitative methods from the humanities, social sciences, and other fields, such as computer science. This section will present the histories of the development of modern Middle Eastern Studies and the digital humanities, concluding with comparing and contrasting their key features.

The Digital Humanities: Definitions

One of the major themes and challenges in theoretical digital humanities discussions concerns the self-definition of the field. The Day of Digital Humanities, which required participants to provide a definition of the digital humanities, compiled a long list of participant-submitted definitions from 2009 to 2011 ("How do you," n.d.).[7] For example, the range of definitions touches on the use of computational tools and

7 This list is a wiki, and contributors are invited to add, modify, or remove their definitions as they see fit. While this policy poses problems for researchers attempting to cite definitions from this list, the collaborative structure with "unstable" text also exemplifies some of the arguments and approaches within the digital humanities.

methods,[8] digital publishing,[9] and the general impact of the digital environment.[10] Bogost (2011) addresses the difficulties of defining the digital humanities, claiming that it "defies both definition and description." Bogost's own definition identifies the digital humanities as "the spiritual successor to humanities computing," rather than attempting to combine all scholarship that includes both digital and humanities features into one field.

In a similar move to avoid a precise definition of the digital humanities, Kirschenbaum (2014) defines the digital humanities as a "tactical term." Kirschenbaum argues that the "digital humanities" has a flexible meaning, which scholars can use professionally or administratively to accomplish specific tasks, such as the creation of a digital services staff position or to secure grant funding attached to digital scholarship initiatives. For Kirschenbaum, a specific definition of the digital humanities is less important than what the flexibility of the term allows scholars to accomplish institutionally or in their own research. Additionally, Kirschenbaum argues that self-identification as a digital humanist is more important for classifying digital humanities work than the nature of the work itself. This vague meaning allows for the inclusion of a broad range of projects and topics,[11] although it does little to clarify the intent or goals of

8 "Using computational tools to do the work of the humanities. -John Unsworth, University of Illinois, USA"

9 "I would say there are five branches in the Digital Humanities : - Computing in the Humanities - History of Computing and Information systems - Digital Publishing and Scholarly Communication - Digital Archiving - Epistemological Thinking about Humanities and the digital Turn. -Enrico Natale, Infoclio.ch - Swiss portal for digital history, Switzerland"

10 "An area of study that focuses on the digital in our daily lives--how we study, think, and interact. - Pollyanna Macchiano, , US"

11 See, for example, the program for Brown University's Digital Islamic Project 2013 conference ("The Digital Humanities + Islamic and Middle East Studies, http://islamichumanities.org/conference2013/), which includes digital ethnography, visualization, digitization, text mining, databases, mapping, e-

scholars identifying as digital humanists.

Burdick et al., (2012) define the digital humanities as the "encounter between traditional humanistic methods and computational methods" (p. 3). Although this definition is also vague, its lack of specificity about what constitutes a digital humanities project makes it partially useful for the purposes of discussing digital Middle Eastern Studies projects, which may be interdisciplinary in nature. However, in its vagueness, this definition excludes the social sciences by focusing only on "traditional humanistic methods," making it inadequate for covering the full range of digital Middle Eastern Studies projects. Spiro (2014) explores the arbitrary division between the digital humanities and the digital social sciences, explaining that the overlap and tension between the humanities and the social sciences existed prior to digital methods and collaboration, particularly in the fields of history and anthropology. Digital Middle Eastern Studies projects, which may be interdisciplinary, rather than solely humanistic in nature, fall outside of a strict definition of the digital humanities. Middle Eastern Studies programs often include the social sciences, meaning that digital projects in this discipline may mix "traditionally" humanistic and social science methods. This report primarily uses the language of the digital humanities, in part due to the currency of this phrase and its extensive development and theorizing. Instead of the phrase "digital humanities," however, the less exclusive phrase "digital scholarship" may ultimately be more appropriate for the purposes of describing digital Middle Eastern Studies work.

---

publishing.

The Digital Humanities: Historical Origins

Burdick et al. (2012) place the beginnings of the digital humanities in the 1940s, starting with Father Busa's project, the *Index Thomisticus* (p. 8). Similarly, other digital humanities scholars trace the same origin story back to Father Busa's project, including Unsworth (2012) and Scheinfeldt (2014). Busa (1980) describes his 1946 project as "a concordance of all the words of Thomas Aquinas, including conjunctions, prepositions and pronouns, to serve other scholars for analogous studies" (p. 83). The immense scope of Busa's vision motivated him to turn to computational methods, bringing him into contact with Thomas J. Watson, Sr. of IBM (p. 84). With IBM's full assistance, Busa developed the use of computational methods for the linguistic analysis of natural texts. According to Busa himself, some people claim he is "the pioneer of computers in the humanities" (p. 84).

Following Busa's groundbreaking project, Burdick et al. (2012) continue to describe the development of the digital humanities and its precursors. According to them, following Busa's humanities computing project, the first wave of the digital humanities occurred in the 1980s. These early projects primarily dealt with databases, focusing on textual analysis and cataloging. The second wave of projects, beginning in the 1990s, centered on the transition to the Web. Many of these projects sought to establish standards for networked computing (p. 8). Finally, the third and most recent wave, beginning in the late 1990s, focuses on the use of digital methods for creating visualizations and network analysis to represent complex systems (p. 9). The projects of

this most recent wave tend to focus on design and visual rhetoric as a key feature, as opposed to applying computational methods to humanities texts or standardizing metadata for networked computing. In part, this transition to a design-based focus relates to the rise of personal computers and thus the need for user-friendly interfaces. Additionally, social media, commonly used as sources of data or platforms for digital humanities communication, draw attention to intuitive Web design and usability.

The Development of Middle Eastern Studies

Lockman (2010) traces the development and history of Middle Eastern Studies as a discipline in American universities. He argues that political pressures from the U.S.'s newly acquired world status in the Cold War resulted in the shift from the classical Orientalism of 19th century universities to an area studies paradigm. Classical Orientalism, according to Lockman, found its home in the humanities. This resulted in particular assumptions about the methods of the field and its object of study, including the primacy of philology, the importance of multilingualism for scholastic competency, and the view of the "Islamic world" as a distinct, separate civilization, that is monolithic and static in its characteristics across time and space (p. 103). Orientalism's methods did not cross over into the social sciences, because its scholars focused on the past, rather than the present. The neglect of the present, including the rise of Arab nationalism and anti-colonial movements in the Middle East and North Africa in the 19th and 20th century, led to the need for a shift from Orientalism as a classical, humanities-oriented discipline to, as Lennon (2014) describes it, "area studies as a militarized social science (p. 133).

Lockman (2010) places the development of area studies in the United States in the historical and political context of the post-War period and the beginning of the Cold War. He describes the sudden rise of the presence of the U.S. in the Middle East following World War II, with the notable exception of American oil corporation involvement in Saudi Arabia starting in the 1930s (p. 116). At the end of World War II, the U.S. saw the strategic importance of the Middle East for its Cold War policies and increased its presence in the region (p. 122). The instability produced by decolonization and nationalist movements caused worries in the U.S. that the Middle East might turn to Soviet influence. These concerns were not unfounded, arising in part from calls for reform and social and political changes sparked by pro-Soviet communist parties in the Middle East (p. 117).

For Lockman, classical Orientalism's focus on the past and its lack of interest in the present rendered it irrelevant to the U.S. government's interest in using the university to train Americans for government service in the Middle East and the production of foreign policy. Lennon (2014) similarly traces the shift from the classical Orientalism associated with European empires, to the "applied social science of a new postwar U.S. national security state" (p. 148). Area studies developed as an interdisciplinary approach, treating geographic regions as dynamic spaces, with a present situation worthy of academic study (Lockman, 2010, p. 124). The shift to area studies as the primary approach to the academic study of the Middle East developed through a combination of university and government support. For example, during the 1950s, the federal

government began directly funding area studies programs through Title VI funds via the 1958 National Defense Education Act (p. 126). Lockman explores how the climate of the Cold War led to scholars accepting military and intelligence funding and the ways in which area studies programs produced potential government recruits in the undergraduate and graduate student populations (p. 144-146). Lennon (2014) explores the continuation of the U.S. government's financial influence into the 21st century, noting for example that a financial audit showed that the CIA was funding area studies scholarship following 2001 (p. 142).

Lockman and Lennon show the political nature of the development and continuation of area studies scholarship in the U.S. In particular, Middle Eastern Studies scholarship can serve to inform or justify American foreign policy and it produces new generations of potential recruits for the Foreign Service. This uneasy relationship between the U.S. government and the academy is not hidden from view and constitutes a persistent source of anxiety in the field of Middle Eastern Studies, particularly in the context of the post-9/11 political climate.

Conceptual and Historical Similarities

Conceptually, the digital humanities and Middle Eastern Studies confront the tensions of interdisciplinary research, particularly through the blending of humanities and social science or computational methods. In Middle Eastern Studies, the mixing of methods and disciplines was a more intentional process. Advocates argued that utilizing different methods was more useful for acquiring relevant policy knowledge about the

region. In the transition from a static to a dynamic view of the Middle East, an interdisciplinary approach appeared necessary in order to capture the many facets of the present situation and to fully inform foreign policy (Lockman, 2010, p. 124).

Similarly, the digital humanities confront and incorporate interdisciplinary research. While some digital humanists accept the collaborative, interdisciplinary nature of digital humanities projects as inherent to the blend in humanities and computational methods, other scholars wish to maintain the humanities as a distinct set of methods and subjects, resisting the inclusion of the social sciences and quantitative methods in their projects. Spiro (2014) attempts to address the tension between the digital humanities and the digital social sciences. She mentions, for example, that they share the same or similar lab spaces. Additionally, the fields use the same tools, such as R for data mining tasks and Gephi for network analysis. She argues for the necessity of collaboration between the digital humanities and the digital social sciences due to these shared spaces and tools. However, she also argues that each should mind their distinct disciplinary differences, particularly with relation to how they analyze evidence and approach argumentation.

Middle Eastern Studies and the digital humanities must grapple with the tension between methods in an interdisciplinary, oftentimes collaborative research setting. One key distinction is that area studies was intentional in its interdisciplinary push, whereas scholars from the digital humanities continue to debate whether they ought to include social science methods and tools in their work. This results in tension over collaboration, as digital humanists are keen to accept the expertise of scholars in other disciplines,

particular computer science, but are also wary of losing what they perceive to be the essence of their humanistic methods.

Historically, the digital humanities and Middle Eastern Studies appeared to arise from approximately the same time period. Middle Eastern Studies, developed by foreign policy concerns in the Cold War, enjoyed stronger financial and governmental support in its development. If we accept the common origin story circulated by digital humanities scholars, Father Busa's 1946 humanities computing project originates in the same U.S. post-War policy context as the development of area studies. However, Busa did not have the same institutional and government support as some area studies scholars enjoyed. This is not to imply that his natural language processing work with IBM is ideologically or politically neutral. IBM, which supported Busa's research, also worked with the U.S. government during World War II. Humanities computing could be said, then, to have similar military and foreign policy-related origins, at least insofar as Busa relied on IBM. Unlike Middle Eastern Studies, however, humanities computing and the digital humanities did not continue to receive financial and institutional support throughout the Cold War, indicating an overall lack of sustained governmental interest. Looking to the current state of the field, Kirschenbaum's (2014) definition of the digital humanities as a "tactical term" takes on a more directly militaristic meaning when it is put into the context of the historical origins of humanities computing.

Finally, the digital humanities and Middle Eastern Studies confront vagueness regarding their definition and scope. Specifically, scholars in the digital humanities at

times are keen to exclude projects that seem to fall more directly into social science departments, such as linguistics or political science. Similarly, Middle Eastern Studies focuses on an arbitrarily defined geographical space, the limits of which sometimes exclude nearby places or certain frames of analysis, such as global or transnational histories (e.g., Braudel, 1995). At times, these geographical divisions do not reflect environmental or linguistic continuity across regions, which may lead to an incomplete research context. The vagueness of the scope of the digital humanities and Middle Eastern Studies allows for fresh approaches to scholarly material, while also arbitrarily excluding certain methods or spaces for the sake of academic identity.

Challenges to the Digital Humanities

In addition to the ire of traditional humanities scholars, other challenges to the digital humanities concern the absence of discussions of diversity under the pretense of connectedness and universality in the digital environment. Other critics of the digital humanities in its current manifestation, such as Lennon (2014), challenge the historical origins of the digital humanities and its uneasy relationship with U.S. national security policies. This section will examine these critiques, before turning to the unique problems faced and challenges posed by Middle Eastern Studies in particular.

Although not specifically responding to the digital humanities, Žižek (2009) critiques those whom he calls "liberal communists" in technological fields, particularly Bill Gates, George Soros, and the CEOs of companies, such as Google and IBM (p. 14). He explains that "liberal communists" do not believe in exploited classes of people, but rather see the world in terms of problems that must be solved through the use of the free market and technological innovation (p. 16). Žižek argues that seemingly charitable individuals like Bill Gates are actually agents of structural violence through the forces of capitalism, because they ignore systemic violence in society by embracing the supposedly universalizing powers of technology (p. 31). For Žižek, "technology," which, based on his examples, seems to refer to computers, software, and the Internet, is closely linked to free market capitalism and charity, functioning in the abstract as a means by which certain social problems are "solved." He focuses specifically on the ideology of "liberal communism," rather than what he might mean by technology, arguing that liberal

communists seek to have lives with greater meaning than the ruthless generation of profits (p. 18).

In the digital humanities, focusing on connectedness and universality can derail attempts to discuss diversity and uneven experiences in the digital environment. McPherson (2012), for example, argues that engaging in discussions of intersectionality is an essential part of the humanistic endeavor. She points to the ways in which technology and understandings of race and racism have a similar "modular" character, which leads to covert bureaucracies and covert racism (p. 151). Noting a resistance to engaging in the cross-section of code and racism, she argues that digital humanists must be willing to examine the history and politics of digital technology, particularly when it seems to be neutral regarding race (p. 153).

On the theme of universality, Williams (2012) notes that digital humanists do not always design for difference within their audiences. Williams argues that the needs of people with disabilities are often neglected in the project designs of digital humanists (p. 202). While the designers of educational software often consider, for example, the needs of users who have visual impairments, the same cannot usually be said for digital humanists. Williams advocates that digital humanists consider "universal design," by which he means, they should consider maintaining the largest audience possible while designing their projects, taking care not to exclude people with disabilities (p. 206). He argues that it is problematic for digital humanists to value open access without considering that access is more complicated than merely putting projects or digital files

on the Web.

Koh (2014) notes the ways in which digitization is uneven, strongly emphasizing European literature and artistic traditions instead of taking a global approach (p. 385). With regard to nineteenth century collections, Koh argues that prioritizing the works of Europeans and neglecting the history of colonialism, specifically as it relates to race and ethnicity, results in an obscuring of the impacts of imperialism (p. 387). She argues that these online collections appear "situated in a historical void" and that the texts "are divorced from the social conditions that have brought them into being" (p. 392). Citing Martha Nell Smith, Koh argues that humanities computing developed in part to shield scholars from topics involving intersectionality and critique, based on computers being supposedly "gender-, race-, [and] class-neutral" (p. 394). This supposed neutrality in another reason why important problems related to difference go unaddressed in the digital humanities community.

Scheinfeldt (2014) discusses post colonialism and difference in relation to the digital humanities. While praising the efforts of Koh and her #dhpoco project, Scheinfeldt (2014) expresses unease with the way in which the digital humanities community ignores difference in order to maintain a collegial environment. He argues that valuing collegiality over difference can become problematic for historically oppressed groups, particularly since white men tend to dominate the digital humanities community. Thus, oppression on the basis of difference risks becoming ignored in favor of preserving the "niceness" of the community. This situation is reminiscent of Žižek's (2009) arguments

about how “charity” and the “universality” of computer and software-based technological solutions cover up and perpetuate the systemic violence of capitalism.

Finally, Lennon (2014) critiques the digital humanities on the basis of its historical origins and its connections to the national security interests of the U.S. government. As previously noted, many scholars in the digital humanities have the same origin story for the beginnings of their field, starting with the project of Father Busa. Lennon complicates this story, pointing to the ways that philology was employed to serve national security needs as early as World War I, specifically for the purposes of cryptology and the application of statistical methods to text (p. 134). He continues, discussing the close connections between the academy and U.S. military interests up until the 1960s. Post-2001, he highlights the increase in government funding for programs in quantitative social science, natural language processing, and critical language acquisition (p. 142). Regarding the digital humanities, he critiques the general lack of awareness of the history of collaboration between the U.S. government and academia (p. 147). Lennon's history of the development of computational humanities as a project serving U.S. military interests further complicates the common origin story told by digital humanists. The lack of questioning is problematic, because it masks the real or possible applications of digital humanities projects or tools for the services of the military.

These critiques point to the ways in which a focus on neutrality and universality in the digital humanities masks systemic inequality and relationships between academia and the military. While it may seem noble to value niceness and collegiality in the digital

humanities community, suppressing discussions of difference does not make inequality and uncomfortable histories go away. Rather, as Koh (2014) indicates, ignoring difference in digital projects can perpetuate and strengthen inequality. In the next section, this report will turn specifically to digital Middle Eastern Studies projects, considering the ways that Middle Eastern Studies can add to and critique existing digital humanities practices and discussions.

Digital Middle Eastern Studies

The Challenges of Digital Middle Eastern Studies Projects

This section surveys various digital Middle Eastern Studies projects, dividing them by theme. These themes include language, collaboration, quantitative and qualitative methods, institutional affiliation, the canonization and bias of digital texts, and ambiguity. While scholars involved in digital projects in other departments may confront similar concerns, this report will approach these themes from a Middle Eastern Studies perspective.

Languages

One of the foremost problems confronting digital scholarship in Middle Eastern Studies concerns the processing of the Arabic script. In their chapter about optical character recognition (OCR) software, Ahmad, Mahmoud, and Parvez (2012) describe some of the features of the Arabic script that create problems for OCR software, which turns the text in scanned images into text which can be searched and is machine-readable and modifiable. The particularly problematic features of the language include the cursive nature of Arabic, the multiple forms many letters have as a result of the cursive style (initial, medial, final, and isolated), unclear fonts, the presence of diacritics and dots, and the way letters may overlap vertically in print form. In particular, dots and diacritics cause problems for Arabic OCR software. Bad quality scans or the presence of extraneous marks may cause the software to read diacritics or dots where they do not exist. The resulting text generated from the scanned images may thus require extensive

editing.

Romanov (2013) describes a similar textual processing problem with regards to text-mining Arabic documents. Romanov worked with documents that were already digitized with cleaned up electronic text, either as the result of manual typing or edited text after OCR processing. Unicode presents a problem for textual processing, because while there are multiple languages that use the Arabic script, such as Urdu and Persian, the letters for each of these languages correspond to different places on the Unicode table (p. 64). Thus, while both Arabic and Persian use the letter م, typing this letter with Persian keyboard settings as opposed to the Arabic keyboard makes a difference regarding how the machine interprets the word. If a word with the same spelling is written on both the Persian keyboard and the Arabic keyboard, the machine will process this as two separate words, due to the way in which the letters correspond to different locations on the Unicode table. For example, the word "اسلام" ("Islam") appears in both the Persian and Arabic languages with the same spelling. If the word is written from a keyboard with Persian settings and from another with Arabic settings, software will read it as two separate words.

A last consideration related to language concerns programming languages. Romanov (2013) writes that "[g]raduate students in our field often learn additional languages of the Islamicate world in order to advance their research" (p. 2). He goes on to clarify that the language that was most necessary for his research was not a spoken, human language, but rather scripting languages, such as Python and R. This is a spin on

the traditional importance in classical Orientalism of language expertise to understand Islam and "Islamic civilization." Instead, Romanov argues that scripting languages allow scholars to read in a different way, by analyzing the characteristics of multiple volumes of text computationally, rather than the scholar personally doing a close reading of all of these volumes. Further emphasizing the point that scripting languages and programming expertise are of importance to scholars doing digital work, Atsuyuki (2004) makes the point that geographic information systems (GIS) may not be user friendly for individuals with a background in area studies. Atsuyuki continues, arguing that the burden is on the designers of software to ensure that there is a good interface between GIS tools and more familiar, user-friendly applications, such as Microsoft Excel. Middle Eastern Studies scholars can meet programmers and usability experts halfway in this knowledge gap by learning programming languages and becoming comfortable with command line interfaces.

A review of literature pertaining to digital projects in Middle Eastern Studies reveals challenges regarding the processing and analysis of human languages, particularly those in the Arabic script. Additionally, challenges may confront the aspiring digital Middle Eastern Studies scholar in the form of mastering programming languages, like Python. Language remains a primary feature of area studies, but digital scholarship potentially adds additional obstacles in the form of learning different kinds of languages. Digital humanists working in any discipline may learn programming languages for their specific projects. Middle Eastern Studies scholars working in a digital environment potentially

face the intimidating prospect of spending many years mastering Arabic, in addition to learning one or more programming languages to sufficiently complete a project. This task need not be impossible, but may seem daunting to aspiring digital humanists, who may find programming languages inaccessible or intimidating, and may not wish to spend time learning additional languages after extensive Arabic study.

Collaboration

Collaboration is a common feature of digital humanities projects, because these projects often require multiple areas of expertise that one individual may find too difficult or time consuming to learn. For example, a scholar who is busy studying classical Arabic may have little time to master the types of programming languages mentioned in the previous section. Burdick et al. (2012) discuss how digital humanities projects challenge traditional notions of solitary authorship in the humanities through collaborative approaches (p. 15). They argue that the requirement of technical knowledge does not replace subject knowledge or language expertise. Middle Eastern Studies scholars may choose to collaborate with more technological inclined individuals, such as computer scientists, in order to product their work. Following this approach, the Middle Eastern Studies scholar can continue to focus on developing the subject-based aspects of the project without, for example, sacrificing a lot of time to master potentially difficult computer programming languages.

Sakr (2009) presents an overview of a digital project called R-Shief, which is a multilingual platform, initially in Arabic and English, and integrates various types of

data, such as tweets, videos, and scholarship focusing on the Middle East and North Africa. Sakr provides an overview of the diverse staff for this project, which includes an Arabic-language programming consultant and several individuals with subject expertise in areas such as digital media, political science, and literature. R-Shief continues to operate in 2014, showing that their collaborative approach is effective in the long term for maintaining this type of project.

Bounhas et al. (2010) also illustrate the importance of collaboration in their article about using a method based on Arabic storytelling to assess information reliability. The authors of this article come from a computer science background. They note the importance of relying on domain experts, or individuals with subject expertise, for their assistance in explaining how Arabic storytelling transmits chains of previous narrators to establish the reliability of a particular story. Additionally, subject experts provided biographical details about the narrators alluded to in the chains of transmission and the means by which these biographies are analyzed for reliability based on this method. In contrast to the Sakr (2009) article, this article shows how technical experts also depend on specialists for subject expertise that may take years to acquire.

A lack of collaboration or communication is also addressed in some of the other digital Middle Eastern Studies projects and readings. For example, Ahmad, Mahmoud, and Parvez (2012) claim that technical experts working with Arabic OCR software often do not share databases for printed Arabic text (p. 151). This means that researchers in this field use different sets of data and may confront redundant challenges individually, rather

than collaborating to solve these problems together. Ahmad, Mahmoud, and Parvez do not discuss the impact of unreliable Arabic OCR software on scholars who intend to use this type of tool. Collaboration between computer scientists and Arabic experts will be required to fine-tune OCR and natural language processing software, as computer scientists may not anticipate irregularities or concerns related to advanced, obscure grammar. Additionally, Atsuyuki (2004) describes how GIS software is confusing or inaccessible for Islamic area studies scholars, showing how usability testers are not necessarily paying attention to the needs and abilities of their potential user communities. Collaboration between subject experts and technical specialists can help both sides to overcome challenges and account for oversights. Based on the difficulties and time involved with learning Arabic, collaboration becomes particularly important for Middle Eastern Studies scholars.

Qualitative and Quantitative Methods

Many of the projects surveyed for this review involved a combination of quantitative and qualitative methods. While many of the project emphasized the divide between these two methods, this distinction is not necessarily as clear as it may seem.[12] Regardless, this supposed distinction as discussed by digital Middle Eastern Studies scholars was most evident in projects that involved text-mining and the use of GIS.

[12] For example, Bergman (2008) argues that the divide between quantitative and qualitative methods is mostly linked to maintaining identity and ideology in specific research fields. Mixed methods research may offer better approaches for different types of research questions, rather than continuing to entrench an arbitrary distinction between "quantitative" and "qualitative" research.

Often, while quantitative, computational methods may usefully and quickly compute data about large volumes of text or allow researchers to study historical or inaccessible landscapes, it is not enough to rely on these methods alone for digital Middle Eastern Studies projects. Qualitative work is valuable in providing historical and social context, checking digital tools for accuracy, and interpreting the results. However, one potential problem of combining these methods is that quantitative methods often do not tell the scholar much that they could not learn from qualitative methods alone.

Sakr (2013) describes a research method combining qualitative and quantitative techniques, called cultural analytics, which she used to study the role of social media in revolutionary movements, specifically the use of Twitter in the January 25th revolution in Egypt. For the purposes of her article, Sakr conducted a micro-study of the hashtag, "Tahrir" (#tahrir) on Twitter using the R-Shief multilingual knowledge management system. Rather than just relying on data obtained through text-mining of tweets, Sakr uses historical data to provide context and interpretation for the results of her micro-study. Based on contextual information about the role of Tahrir Square in previous historical moments, she interprets the primarily Arabic Twitter data using #tahrir as indicating that Tahrir Square holds a new place in the Egyptian national imagination (p. 258).

In relation to GIS and mapping, Hikari (2004) uses a historical document and GIS software to locate 11 lost Ottoman villages. There are few, if any, archaeological traces of these villages. Hikari uses a close reading of the the *Temettuat* (Income) Registers

(TR199) from the Ottoman Archive Department to extrapolate data on the possible location of each of the 11 villages. Since the documents rarely refer to distances in spatial terms, but rather describe how long it takes to travel from one place to another, Hikari had to reinterpret temporal estimates in spatial terms for the purposes of the GIS program. Hikari converted these times to approximately four km/hour on foot, with allowances and approximations made depending on whether the road was arterial or involved physical obstacles such as mountains. Although Hikari finds probable locations for these villages through a combination of close reading of historical documents and quantitative and computational methods, additional fieldwork investigating possible archaeological traces will be necessary to establish the locations of these villages with any certainty.

However, fieldwork is not always possible, as Kennedy (2011) and Myers (2010) note in their articles about remote sensing in archaeology. Kennedy describes how some nation-states, such as Saudi Arabia, refuse to give permits to conduct "aerial archaeology," nor give access to photography taken during aerial reconnaissance missions in order to study and map ancient sites, colloquially referred to as the "Works of the Old Men." Due to their size and features, these sites are often difficult to study from the ground, yet archaeologists are forced to heed laws and Saudi sovereignty. Remote sensing through Google Earth offers a potentially unethical way for archaeologists to attempt to study these sites even when they lack permission to conduct proper fieldwork. Areas which are difficult to visit due to violent conflict offer a less ethically problematic

situation in which archaeologists may require remote sensing in place of fieldwork. The lack of access to sites on the ground, whether due to legal barriers or conflict, constitutes a problem that is somewhat unique to Middle Eastern Studies.

Remote sensing and GIS offer ways to computationally map archaeological sites. However, based on the Hikari (2004) reading, it is preferable to combine remotely sensed data with qualitative methods and fieldwork. In particular, Atsuyuki (2004) notes the limitations of remotely sensed data, such as the obstruction of the visibility of particular areas by clouds. However, remotely sensed data also offer a check on inaccurate or ambiguous data derived from historical documents (p. 16). Therefore, through the use of GIS and remotely sensed data, scholars may be able to learn more about a particular topic than by close reading and qualitative methods alone. The potential for computational reading and text-mining for producing information that is not obvious or could not be gathered through close reading is less reliable.

Institutional Affiliations

Institutional affiliations can be an obstacle in the way of accomplishing project goals, particularly in the context of conducting research in the Middle East. In the case of the Kennedy (2011) study, national affiliation can prevent archaeologists from conducting adequate fieldwork when it comes into contact with legal barriers and concerns of national sovereignty. In a different context, Urgola (2014) describes a project hosted by the American University in Cairo (AUC) to collect the tangible remains from the Egyptian Revolution. These remains, obtained through crowdsourcing, include digital

photographs, videos, documents, banners, and oral histories. Occasionally, potential participants excused themselves from the project when they were informed of the involvement of the AUC as the sponsoring institution. The reasons included criticism of the AUC for "capitalizing" on the Revolution or for its close relationship with ousted president, Hosni Mubarak. Urgola also alluded to a second project, called the Revolution on the Web, which was sponsored by the Egyptian National Archives. The project faced difficulties making documents freely available on the Web, due to the Egyptian government's custody of these materials. These examples show the way in which an affiliation with particular institutions or governments can limit the content or scope of projects and reduce participation and enthusiasm from potential research communities.

Canonization and Bias of Digitized Texts

Rippin (2013) and Romanov (2013) both refer to the way in which digitization can lead to the inadvertent canonization of texts. Rippin (2013) looks at the way in which the digital Quran can change religious practice and the status of the text with relation to supplementary works. He notes that once concerns related to the integrity of the text of the Quran in digital form abated, Web sites began to include translations and commentaries, along with the Arabic text of the Quran. This shows a relaxing of religious attitude, since previously, the Arabic text of the Quran was privileged above translations and commentaries. In a digital format, they may appear on the same page together as if this distinction is not present. The canonization of supplementary texts and particular translations may occur as individuals find the online formats easier to access or study.

Romanov (2013) raises a similar concern with regard to Islamic biographies. He notes that digitized biographical collections on the Web primarily represent Salafi and Sunni biographies (p. 30). These collections introduce a bias to using computational tools and digitized texts for studying Islamic biographies as a whole, as some religious identities are not as strongly represented in digital form. A scholar relying on the entirety of the digitized texts of Islamic biographies would likely make assumptions about the incomplete corpus, which reflects the Salafi/Sunni digitization bias. This bias could potentially lead to a canonization of Salafi or Sunni biographical texts, unless there is a concerted effort to remedy uneven representation in digitized texts. This problem is also addressed in the Koh (2014) article, connected to her concern that uneven digitization masks the colonial situation in the nineteenth century through prioritizing the digitization of European texts without a global context.

Ambiguity

For digital projects, the representation of ambiguity presents a challenge and an opportunity. Ambiguous or complex data can be problematic for tools that reduce phenomena to a single point. In the context of GIS, Atsuyuki (2004) mentions that many Islamic area studies projects using GIS software focus on historical topics and geographic changes over time. GIS software can be difficult for these projects, because it is designed for geographic and spatial data, and is often weaker for representing and analyzing temporal data. Additionally, precise and accurate temporal data may be difficult to obtain from historical documents, due to ambiguity in language or measurement, mistakes, or

the lack of a complete historical record. Thus, the combination of GIS with historical documents may produce misleading or inaccurate results. On a related topic, Hikari (2004) mentions that time is perceived differently depending on the time period, region, and individual, leading a researcher to produce estimates or inaccuracies in their work. Due to the weakness of GIS for representing temporal data, it is difficult to imagine how GIS software might be used to represent multiple individual impressions of time.

The HyperCites project embraces this sense of ambiguity and multiple interpretations of space (Presner, et al., 2014). HyperCities is based on the concept of "thick mapping," which attempts to present a map that is "polyvocal" and representative of temporal and spatial dimensions. Presner et al. describe how typically, maps attempt to accurately represent an external reality, but that these maps reflect political and individual ideologies and interpretations of the world. With the advantages of digital maps and networking capabilities, maps can offer the means to display an ongoing dialectical process of interpretation, rather than a biased attempt at representing an external reality. The HyperCities project shows an attempt by digital humanists to expand the limited capabilities of digital mapping to integrate temporal data into spatial and geographic representations. Additionally, embracing ambiguity and complexity in data, rather than presenting a problem, quite possibly leads to more ethical means of mapping and representation through the inclusion of diverse voices and interpretations. Polyvocal maps, for example, challenge the idea that all individuals experience the external world in the same way.

Ethics and Digital Middle Eastern Studies

The pursuit of digital projects in Middle Eastern studies contributes specific, pressing ethical quandaries to the digital humanities more broadly. While other types of digital humanities projects may focus on the recent past and living people, the foreign policy concerns of the United States government and military ought to give scholars pause when creating projects that study or represent people currently living in the Middle East.

Drawing on the work of Michel Foucault, Mitchell (1988) gives lengthy consideration to the ways in which quantifiable data about individuals can be used by governments for the purposes of population maintenance and control. Mitchell's research, however, refers to a world before digital technology. Lockman (2010) discusses more recent work since the establishment of Middle Eastern Studies departments to quantify, control, and survey populations in the Middle East. He mentions, for instance, how some scholars accepted secret funding during the Cold War from military and intelligence agencies to study topics of interest to United States foreign policy interests (p. 144). The historical relationship between data about the Middle East and its unethical or military applications is, therefore, extensive.

Access to material resources, locations, and individuals, particularly in the context of conflict, is a major concern for Middle Eastern Studies scholars studying present conditions, particularly scholars wishing to study architecture or manuscripts that are under threat. Many examples of cultural heritage under threat from ongoing conflict

reach Western media, from the destruction of significant holdings of the Institut d'Égypte in Cairo during the Egyptian Revolution to the Islamic State destroying Christian manuscripts in Iraq. Additional threats and destruction occurred in Mali when Tuareg rebels and Ansar Dine set fire to Arabic manuscripts, resulting in significant outcries from the academic community.

Hunwick and Boy (2008) examine the Malian manuscript tradition in the context of Western colonialism. By 1894, French forces had conquered Timbuktu, and for the first time since 1343, the city was controlled by non-Muslims. The French used the colonial administration to impose their language and school system in Mali, which had a significant impact on the scholarly traditions of the region. The Tuareg resisted French colonialism by refusing to send their children to the French schools. Fearing confiscation by the colonial administration, families began hiding away their treasures, including their manuscript collections (p. 62). Since many manuscripts were subsequently burned, stolen, or seized, the fear of colonial pillaging was not baseless (p. 15).

Related to digitization, some families fear that manuscripts will reveal unsavory details about their status in the past, which could have negative repercussions on their present reputation. For example, one family claimed to be the descendants of a great noble. When family manuscript collections were opened up to the public, this individual was revealed to have been a slave, causing social repercussions for the descendants. Additionally, these documents could reveal past unpaid debts between families or the unjust acquisition of a piece of land or a house (p. 16). Families thus tend to keep their

collections private to protect them from being stolen and to preserve the current social order (p. 15). Malian manuscript collections reveal how even though Middle Eastern Studies scholars may, with good intentions, wish to preserve access to threatened manuscripts through digitization efforts, these digitization efforts may have a negative impact on the people currently alive in the region.

Presner et al. (2014) refer to an unease regarding the HyperCities concept, particularly regarding the project which focused on Twitter data from within a 200 mile radius of Tahrir Square in Cairo during the January 25th Revolution. While HyperCities is intended to demonstrate ethical mapping practices, the authors worried when watching the map light up with Tweets from Egypt, about their role as distant, disconnected, non-participating observers. Additionally, while the HyperCities project gathers Tweets through data-mining for the purpose of questioning privileged or political accounts of reality, these publicly available data can also be used to track individual protesters and silence them (p. 155).

Myers (2010) discusses similar ethical concerns in the use of remotely sensed satellite data from Google Earth to monitor construction and demolition at Camp Delta at Guantanamo Bay. Through Google Earth, archaeologists can get a sense of the intentions of those in charge at Camp Delta, as the camp changes from a temporary structure to a permanent concrete prison and the War on Terror became a long term, ongoing process. Tracking changes is important, because government documentation related to Camp Delta may never be released to the public. However, Myers warns that it is important to

be aware of the ethical concerns related to the use of Google Earth in place of fieldwork. While Google Earth is cost effective and easy to use, Myers argues that it denies a voice to those being viewed through remotely sensed, high-resolution satellite imagery. It may also violate the wishes of nation-states which use their sovereignty to attempt to restrict aerial or satellite images, as Kennedy (2010) describes.

Myers (2010) indicates two ethical concerns when Google Earth is used to study people living in the present day. First, the people who are being studied are denied a voice in how or if they are represented, making them unwilling participants in an observational study. Myers compares Google Earth to a "global panopticon."[13] Second, archaeologists who primarily rely on Google Earth risk regarding the people they are studying as objects, because they examine human life from an extreme distance using technology originally developed for militaristic purposes. Myers argues that Google Earth should still be used to track secret government actions, and in this way, the "global panopticon" can be used against power structures by ordinary citizens. Additionally, archaeologists should, where possible, supplement Google Earth imagery, whether through fieldwork or oral histories, artifacts, and memoirs.

Rippin (2013) raises the topic of the custodianship of cultural heritage data. Although he does not elaborate much on this point, it is in line with Myer's argument about how participants may have little to no voice in how or if they are studied or

[13] See, for example, Michel Foucault's (1975) *Discipline and Punish: The Birth of the Modern Prison* for a description of the panopticon as a metaphor for the use of surveillance as a disciplinary technique.

represented in digital projects. Rippin addresses the concerns of Muslims who do not think the digital representation of the Quran is reliable or religiously lawful. The problems of distance, surveillance, access, and consent are raised in digital Middle Eastern Studies projects, which provides a unique and pressing concern to digital humanists in general.

Conclusion

While digital Middle Eastern Studies scholars face many of the same problems as other digital humanists, such as adjusting to collaborative structures of scholarship or tensions between interdisciplinary approaches, many challenges are specific to the Middle East, its colonial history, and its languages. The efforts of the #dhpoco project, led by Koh (2014), highlight some of the political implications of the digital humanities as it relates to colonial legacies and imperialism. Digital Middle Eastern Studies projects raise similar concerns, but more specifically have a potential impact on individuals currently living in the Middle East.

Lennon (2014) highlights the history of the relationship between the digital humanities and U.S. military interests, which is similar to the development of Middle Eastern Studies as an area studies discipline. Responding to Lennon, Kirschenbaum (2014) reacts to the charges that the digital humanities are "the NSA of the MLA" (p. 50). He argues that there is a distinction between "data mining a corpus of nineteenth-century fiction and data mining your telephone calling records" (p. 53). Although Kirschenbaum may view the former as harmless, he neglects the ways in which digital humanities projects, particularly from Middle Eastern Studies, can have an impact on the present day. Additionally, Middle Eastern Studies scholars face additional hurdles, such as problems with the Arabic language, which leads to the uneven adoption of digital projects in a global context.

Scholars working on digital Middle Eastern Studies projects should not, however,

abandon their aspirations due to technological and ethical hurdles. While anxieties about government funding will likely continue to persist in Middle Eastern Studies departments, scholars working on digital projects should take care to acknowledge the possible strings attached. Additionally, scholars should consider the present day situation in the Middle East and the impact their projects may have. While the desire, for example, to digitize Malian manuscripts to save them from destruction may seem to be a noble aspiration, opening these manuscripts to public scrutiny can also threaten the social order and standing of present day Malians. Scholars should consider consulting with the custodians of manuscript collections before digitization, rather than assuming that digitization is inherently beneficial. Finally, technological hurdles to working with non-Roman languages or complex data sets may seem insurmountable, particularly problems related to the Arabic language. However, Koh's (2014) concerns about the unevenness of digital representation in a global context and the possible influence this can have on views of colonialism justify perseverance. Kirschenbaum's (2014) attempt to distinguish between data mining personal information and humanities texts is clear only in the context of disciplines that work with materials less connected to U.S. foreign policy goals. It is important for digital Middle Eastern Studies scholars to pursue their work, maintaining an awareness of politics, funding, and ethics, while continuing to participate in wider digital humanities discussions and advocating for a globalized digital humanities.

References

Atsuyuki, O. (2004). Introducing geographical information systems in Islamic area studies. In O. Atsuyuki (Ed.), *Islamic area studies with geographic information systems* (1-18). London: RoutledgeCurzon.

Bergman, M. M. (2008). *Advances in mixed methods research: Theories and applications*. Los Angeles: Sage.

Bogost, I. (2011, August 25). Beyond the elbow-patched playground. Retrieved from http://bogost.com/blog/beyond_the_elbow-patched_playg_1/

Braudel, F. (1995). *The Mediterranean: And the Mediterranean world in the age of Philip II, volume I*. Berkeley, CA: University of California Press.

Burdick, A., Drucker, J., Lunenfeld, P., Presner, T., & Schnapp, J. (2012). *Digital_humanities.* Cambridge, MA: The MIT Press.

Busa, R. (1980). The Annals of Humanities Computing: The Index Thomisticus. *Computers and the Humanities, 14*, 83-90.

Hikari, E. (2004). The use of GIS to locate abandoned villages listed in the *Temettuat* registers of Balıksir district, Anatolia. In O. Atsuyuki (Ed.), *Islamic area studies with geographic information systems* (122-138). London: RoutledgeCurzon.

How do you define humanities computing/digital humanities? (n.d.). Retrieved March 27, 2015 from http://www.artsrn.ualberta.ca/taporwiki/index.php/How_do_you_define_Humanities_Computing_/_Digital_Humanities%3F

Hunwick, J. O., & Boye, A. J. (2008). *The hidden treasures of Timbuktu: Rediscovering Africa's literary heritage*. New York, NY: Thames & Hudson.

Kennedy, D. (2011). The "Works of the Old Men" in Arabic: remote sensing in interior Arabia. *Journal of Archaeological Science, 38*, 3185-3203.

Kirschenbaum, M. (2014). What is 'digital humanities,' and why are they saying such terrible things about it? *differences 25*(1), 46-63.

Koh, A. (2014). Inspecting the nineteenth-century literary digital archive: Omissions of empire. *Journal of Victorian Literature 19*(3), 385-395.

Lennon, B. (2014). The digital humanities and national security. *differences 25*(1), 132-155.

Lockman, Z. (2010). *Contending visions of the Middle East: The history and politics of Orientalism*. Cambridge: Cambridge University Press.

McPherson, T. (2012). Why are the digital humanities so white? Or thinking the histories of race and computation. In M. Gold (Ed.), *Debates in the Digital Humanities* (139-160). Minneapolis: University of Minnesota Press.

Mitchell, T. (1988). *Colonising Egypt*. Cambridge: Cambridge University Press.

Myers, A. (2010). Camp Delta, Google Earth and the ethics of remote sensing in archaeology. *World Archaeology, 42*(3), 455-467.

Presner, T., Shepard, D., & Kawano, Y. (2014). *HyperCities: Thick mapping in the digital humanities.* Cambridge, MA: Harvard University Press.

Rippin, A. (2013). The Qur'ān on the Internet: Implications and future possibilities. In T. Hoffmann & G. Larsson (Eds.), *Muslims and the new information and communication technologies: Notes from an emerging and infinite field* (113-126). Dordrecht: Springer.

Romanov, M. G. (2013). *Computational reading of Arabic biographical collections with special reference to preaching in the Sunnī world (661-1300 CE)* (Unpublished doctoral dissertation). University of Michigan, Ann Arbor.

Sakr, L. S. (2013). A digital humanities approach: Text, the Internet, and the Egyptian uprising. *Middle East Critique*, *22*(3), 247-263. http://dx.doi.org/10.1080/19436149.2013.822241

Scheinfeldt, T. (2014, April 7). The dividends of difference: Recognizing digital humanities' diverse family tree/s. Retrieved from http://foundhistory.org/2014/04/the-dividends-of-difference-recognizing-digital-humanities-diverse-family-trees/

Spiro, L. (2014, April 9). Defining digital social sciences. *dh+lib*. Retrieved from http://acrl.ala.org/dh/2014/04/09/defining-digital-social-sciences/

Sreberny, A., & Khiabany, G. (2010). *Blogistan: The Internet and Politics in Iran*. New York: I.B. Tauris & Co Ltd.

Unsworth, J. (2012, October 9). What's “digital humanities” and how did it get here? Retrieved from https://blogs.brandeis.edu/lts/2012/10/09/whats-digital-humanities-and-how-did-it-get-here/

Urgola, S. (2014). Archiving Egypt’s revolution: The ‘University on the Square Project’, documenting January 25, 2011 and beyond. *IFLA, 40*(1), 12-16.

Williams, G. (2012). Disability, universal design, and the digital humanities. In M. Gold (Ed.), *Debates in the Digital Humanities* (202-212). Minneapolis: University of Minnesota Press.

Žižek, S. (2009). *Violence: Six sideways reflections*. London: Profile Books Ltd.